

FIG. 2A

Human G Protein Coupled Receptor Family
 (Receptors known as of January, 1999)

CLASS	LIGAND	NUMBER	TISSUE	PHYSIOLOGY	THERAPEUTICS
•Class I Rhodopsin like	•Amine •Acetylcholine (muscarinic & nicotinic) •Adrenoceptors •Alpha Adrenoceptors •Beta Adrenoceptors •Dopamine •Histamine •Serotonin (5-HT) •Peptide •Angiotensin •Bradykinin •C5a anaphylatoxin •Fmet-leu-phe •Interleukin-8 •Chemokine •Orerxin •Nociceptin •CCK (Gastrin) •Endothelin •Melanocortin •Neuropeptide Y •Neurotensin •Opioid •Somatostatin	5 6 3 5 2 16 2 1 1 3 1 6 2 1 2 2 2 5 5 1 3 5	Brain, Nerves, Heart Brain, Kidney, Lung Kidney, Heart Brain, Kidney, GI Vascular, Heart, Brain Most Tissues Vascular, Liver, Kidney Liver, Blood Blood Blood Blood Blood Brain Brain Gastrointestinal Heart, Bronchus, Brain Kidney, Brain Nerves, Intestine, Blood Brain, Brain, Gastrointestinal	Neurotransmitter Glucogenesis Muscle Contraction Neurotransmitter Vascular Permeability Neurotransmitter Vasoconstriction Vasodilation Immune System Chemoattractant Chemoattractant Chemoattractant Fat Metabolism Bronchodilator, Pain Motility, Fat Absorption Muscle Contraction Metabolic Regulation Neurotransmitter CNS CNS Neurotransmitter	Acuity, Alzheimer's Diabetes, Cardiovascular Cardiovascular, Respiratory Cardiovascular, Parkinson's Anti-inflammatory, Ulcers Depression, Insomnia, Analgesic Cardiovascular, Endocrine Anti-inflammatory, Asthma Anti-inflammatory Anti-inflammatory Anti-inflammatory Anti-inflammatory Obesity Airway Diseases, Anesthetic Gastrointestinal, Obesity, Parkinson's Cardiovascular, Respiratory Anti-inflammatory, Analgesics Behavior, Memory, Cardiovascular Cardiovascular, Analgesic Depression, Analgesic Oncology, Alzheimer's

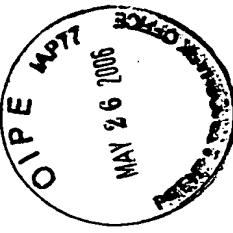


FIG. 2B

• Tachykinin (Substance P, NKA ₁)	3	Brain Nerves	Neurohormone	Depression, Analgesic
• Thrombin	3	Platelets, Blood Vessels	Coagulation	Anti-coagulant, Anti-inflammatory
• Vasopressin-like	4	Arteries, Heart, Bladder	Water Balance	Anti-diuretic, Diabetic Complications
• Galanin	1	Brain, Pancreas	Neurotransmitter	Analgesics, Alzheimer's
• Hormone protein				
• Follicle stimulating hormone	1	Ovary, Testis	Endocrine	Infertility
• Lutropin-choriogonadotrophic	1	Ovary, Testis	Endocrine	Infertility
• Thyrotropin	1	Thyroid	Endocrine	Thyroidism, Metabolism
• (Rhod)opsin				
• Opsin				
• Olfactory	5	Eye	Photoreception	Ophthalmic Diseases
• Prostanoid		4 (~1000) Nose	Smell	Olfactory Diseases
• Prostaglandin	5	Arterial, Gastrointestinal	Vasodilation, Pain	Cardiovascular, Analgesic
• Lysophosphatidic Acid	2	Vessels, Heart, Lung	Inflammation	Cancer, Anti-Inflammatory
• Sphingosine-1-phosphate	2	Most Cells	Cell proliferation	Cancer
• Leukotriene	1	White Blood Cells, Bronchus	Inflammation	Asthma, Rheumatoid Arthritis
• Prostacyclin	1	Arterial, Gastrointestinal	Platelet Regulation	Cardiovascular
• Thromboxane	1	Arterial, Bronchus	Vasoconstriction	Cardiovascular, Respiratory
• Nucleotide-like				
• Adenosine	4	Vascular, Bronchus	Multiple Effects	Cardiovascular, Respiratory
• Purinoceptors	4	Vascular, Platelets	Relaxes Muscle	Cardiovascular, Respiratory
• Cannabis	2	Brain	Sensory Perception	Analgesics, Memory
• Platelet activating factor	1	Most Peripheral Tissues	Inflammation	Anti-inflammatory, Anti-asthmatic
• Gonadotropin-releasing hormone like				
• Gonadotropin-releasing hormone	1	Reproductive Organs, Pituitary	Reproduction	Prostate Cancer, Endometriosis
• Thyrotropin-releasing hormone	1	Pituitary, Brain	Thyroid Regulation	
• Growth hormone-inhibiting factor	1	Gastrointestinal	Neuroendocrine	
• Melatonin	1	Brain, Eye, Pituitary	Neuroendocrine	Regulation of Circadian Cycle

FIG. 2C

•Class II	Secretin Like	1 •Secretin •Calcitonin •Corticotropin releasing factor/urocortin •Gastric inhibitory peptide (GIP) •Glucagon •Glucagon-like Peptide 1 (GLP-1) •Growth hormone-releasing hormone •Parathyroid hormone •PACAP •Vasoactive intestinal polypeptide (VIP)	1 Bone, Brain Adrenal, Vascular, Brain Adrenals, Fat Cells Liver, Fat Cells, Heart Pancreas, Stomach, Lung Brain Bone, Kidney Brain, Pancreas, Adrenals Gastrointestinal	Digestion Calcium Resorption Neuroendocrine Sugar/Fat Metabolism Gluconeogenesis Gluconeogenesis Neuroendocrine Calcium Regulation Metabolic Regulation Motility	Obesity, Gastrointestinal Osteoporosis Stress, Mood, Obesity Diabetes, Obesity Cardiovascular Cardiovascular, Diabetes, Obesity Growth Regulation Osteoporosis Metabolic Regulation Gastrointestinal
•Class III		7 •Metabotropic Glutamate •GABA _B •Extracellular Calcium Sensing	1 Brain Parathyroid, Kidney, GI Tract	Sensory Perception Neurotransmitter Calcium Regulation	Hearing, Vision Mood Disorders Cataracts, GI Tumors

FIG. 3A**G protein-coupled receptors:**

(Division into Class A

Or Class B)

1. **A1 adenosine receptor [Homo sapiens]. ACCESSION AAB25533**
NPIVYAF RIQKFRVTFL KIWNDHFRCQ PAPPIDEDLP EERPDD
Class A
2. **adrenergic, alpha -1B-, receptor [Homo sapiens]. ACCESSION NP_000670**
npiiiypc sskefkrafv rilgcqcrgr grrrrrrrrr lggcaytyrp wtrggslers qsrkdsldds gsclsgsqrst lpsaspsspgy
lrgapppv leafpewkap gallslape ppgrrgrhds gplftfklit epespgtdgg asnggceaaa dvangqpgfk
Class A
3. **adrenergic receptor alpha-2A [Homo sapiens]. ACCESSION AAG00447**
npviytifn hdfrrafkki lcrgdrkriv
Class A
4. **alpha-2B-adrenergic receptor - human. ACCESSION A37223**
npviytifn qdfrafafrri lcpwtqtaw
Class A
5. **alpha-2C-adrenergic receptor - human. ACCESSION A31237**
npviytvfn qdfpsfkhi lfrrrrrgfr q
Class A
6. **beta-1-adrenergic receptor [Homo sapiens]. ACCESSION NP_000675**
npiiyers pdfrkafqgl lccarraarr rhathgdrpr asgclarpgp pspgaasdd ddddvvvgatp parlep wag
cnngaaadsd sssldepcrpg faseskv
Class A
7. **beta-2 adrenergic receptor. ACCESSION P07550**
npliycrsp dfriafqell clrsslkay gngyssngnt 361 geqsgyhveq ekenklced lpgtedfvgh qgtvpsdnid
sqgrmcstnd sll
Class A
8. **dopamine receptor D1 [Homo sapiens]. ACCESSION NP_000785**
npii yafnadfrka fstllgcyr1 cpatnnaiet vsinnngaam fsshheprgs iskecnlvyl iphavgssed lkkeeaagia
rpleklspal svildydtv slekiqpitq ngqhpt
Class A
9. **D(2) dopamine receptor. ACCESSION P14416**
npiiytfm iefrkafk1 lhc
Class A

FIG. 3B

10. **d3 dopamine receptor - human.** ACCESSION G01977
np viytfmief rkafkils
Class A
11. **dopamine receptor D4 - human.** ACCESSION DYHUD4
npyiytv fnaefrnvfr kalracc
Class A
12. **dopamine receptor D5 - human.** ACCESSION DYHUD5
npyiya fnadfqkvfa qllgcshfc s rtpvetvnis nelisynqdi vfhkeiaay ihmmpnavtp gnrevdndee
egpfdrmfqi yqtspdgdpv aesvweldce geisldkitp ftpngfh
Class A
13. **muscarinic acetylcholine receptor M1 [Homo sapiens].** ACCESSION NP_000729
npmcyal cnkafrdtfr lllcrwdkr rwkipkrpg svhrtprqc
Class A
14. **muscarinic acetylcholine receptor M2 [Homo sapiens].** ACCESSION NP_000730
npacy alcnafkkt fkhilmchyk nigatr
Class A
15. **muscarinic acetylcholine receptor M3 [Homo sapiens].** ACCESSION NP_000731
n pvcyalcnkt frtfkmlli cqcdkkrrk qyyqqrqsvi fhkrapeqal
Class A
16. **muscarinic acetylcholine receptor M4 [Homo sapiens].** ACCESSION NP_000732
npa cyalcnatfk ktfrhllcq yrnigtar
Class A
17. **m5 muscarinic receptor.** locus HUMACHRM ACCESSION AAA51569
npicyalcnr tfrtkfmll lcrwkkkkve eklywqgnsk lp
Class A
18. **5-hydroxytryptamine (serotonin) receptor 1A [Homo sapiens].** ACCESSION BAA90449
npyiy ayfnkdfqna fkkiikckf
Class A
19. **5-hydroxytryptamine (serotonin) receptor 1B [Homo sapiens].** ACCESSION BAA94455
npiyt msnedfkqaf hklirfkcts
Class A
20. **5-hydroxytryptamine (serotonin) receptor 1E [Homo sapiens].** ACCESSION BAA94458
n pllytsfned fklafkkir cre
Class A

FIG. 3C

21. **OLFACTORY RECEPTOR 6A1.** ACCESSION O95222
npiiyelmq evkralccil hlyqhqdpgp kkgsrnv
Class A
22. **OLFACTORY RECEPTOR 2C1.** ACCESSION O95371
npliy tlrmnevkgal lrllgkgre vg
Class A
23. **angiotensin receptor 1 [Homo sapiens].** ACCESSION NP_033611
npl fygflgkkfk ryflqlkyi ppkakshsnl sfkmsfisyr psdnvssstk kpapcfeve
Class B
24. **angiotensin receptor 2 [Homo sapiens].** ACCESSION NP_000677
npflycf vgnrfqqkllr svfrvpitwl qgkresmscr kssslremet fvs
Class B
25. **interleukin 8 receptor beta (CXCR2) [Homo sapiens].** ACCESSION NM_001557
NPLIYAFIGQKFRHGLLKILAIHGLISKDSLPKDSRPSFVGSSSGHTSTTL
Class B
26. **cx3c chemokine receptor 1 (cx3cr1) (fractalkine receptor)**
ACCESSION P49238
np liyafagekf rrylyhlygk clavlcgrsv hvdfsssesq rsrhgsvlss nftyhtsdgd allll
Class B
27. **neurotensin receptor - human.** ACCESSION S29506
n pilynlvsan frhiflatla clcpvwrrrr krpafsrkad svssnhflss natretly
Class B
28. **SUBSTANCE-P RECEPTOR (SPR) (NK-1 RECEPTOR) (NK-1R).** ACCESSION P25103
npiiyclnd rfrlgfkhafrccpfisagd yeglemkstr ylqtqgsvyk vsrlettistvvgaheepe dgpkatpssl
dltsncssrs dsktmtesfs fssnvls
Class B
29. **vasopressin receptor type 2 [Homo sapiens].** ACCESSION AAD16444
npwiyasfss svsselrsll ccargrtpps lgpqdescft assslakdts s
Class B
30. **thyrotropin-releasing hormone receptor - human.** ACCESSION JN0708
npyiy nlmsqkfraa frklcnckqk ptekpanysv alnysvikes dhfstelddi tvtdtysat kvsfddtcla sevsfsqs
Class B

FIG. 3D

31. **oxytocin receptor - human.** ACCESSION A55493
npwiym lftghlfhel vqrflccas ylkgrrlget saskksnsss fvishrsssq rscsqpsta
Class B
32. **neuromedin U receptor [Homo sapiens].** ACCESSION AAG24793
npvlyslmssrfretfqealclgacchrlprhsshlsrmttgstlcvgsgwvhplagndgpeaqqetdps
Class B
33. **gastrin receptor.** ACCESSION AAC37528
nplvy cfmhrrfrqa cletcarccp rpprarpral pdedpptpsi aslsrlsytt *isflgpg*
Class B
34. **galanin receptor 3 [Homo sapiens].** ACCESSION 10879541
nplv yalashhra ffrlwpcgr rrhrarral rrvpassgp pgcpgdarps grllagggqg pepregpvhg geaargpe
Class A
35. **edg-1 - human.** ACCESSION A35300
npiiy tlnkemrra firimscckc psgdsagkfk rpiiagmefs rsksdnsshp 361 qkdegdnpet imssgnvnss s
Class A
36. **central cannabinoid receptor [Homo sapiens].** ACCESSION NP_057167
npiiyalr skdlrhafrs mfpscegtaq pldnsmgdsd clkhannaa svhraaesci kstvkiakvt msvstdtsae al
Class A
37. **delta opioid receptor - human.** ACCESSION I38532
npvlyaf ldenfkrcfr qlcrkpcgrp dpssfsrpreatarervtac tpsdgpaggrr aa
Class A
38. **proteinase activated receptor 2 (PAR-2) human.** ACCESSION P55085
dpfvyyfvshdfrdhaknallcrsvrtvkqmqvsltskkhsrkssyssssttvktsy
Class A
39. **vasopressive intestinal peptide receptor (VIPR) rat.** ACCESSION NM_012685
NGEVQAEELRRKWRRLQGVLGWSSKSQHPWGGSNGATCSTQVSMLTRVSPSARR
SSSFQAEVSLV
Class B

FIG. 4A

The mutated amino acid at the second position of the DRY motif is underlined.

VASOPRESSIN V2 RECEPTOR - (Human)
accession P30518

R137H

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1 MLMASTTSBV PGHPSLPSLP SNSSQERPLD TRDPPLLARAE LALLSIVFVA VALSNGLVLA
61 ALARRGRRGH WAPIHVFIGH LCLADLAVAL FQVLPQLAWK ATDRFRGPDA LCRAVKYLQM
121 VGYMYASSYMI IAMTLDHRHA ICRPMILAYRH GSGAHWNRPV LVAWAFSLLL SLPQLFIFAQ
181 RNVEGGSGVT DCWACFAEPW GRRTYVTWIA LMVFVAPTLG IAACQVLIFR EIHASLVPGP
241 SERPGGRRRG RRTGSPGEGA HVSAAVAKTV RMTLVIVVVY VLCWAPFFLV QLWAAWDPEA
301 PLEGAPFVLL MLLASLNSCT NPWIYASFSS SVSSELRSLL CCARGRTPPS LGPQDESCTT
361 ASSSLAKDTS S
(SEQ ID NO:40)

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ALPHA-1B ADRENERGIC RECEPTOR (ALPHA 1B-ADRENOCEPTQR).
(Golden hamster)
ACCESSION P18841

R143E

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1 MNPDLLDTGHN TSAPAQWGEL KDANFTGPNQ TSSNSTLPQL DVTRAISVGL VLGAFILFAI
61 VGNILVILSV ACNRHLRTPT NYFIVNLAIA DLLLSFTVLP FSATLEVLGY WVLGRIFCDI
121 WAAVDVLCCT ASILSLCAIS IDEYIGVRYS LQYPTLVTRR KAILALLSVW VLSTVISIGP
181 LLGWKEPAPN DDKECGVTEE PFYALFSSLG SFYIPLAVIL VMYCRVYIVA KRTTKNLEAG
241 VMKEMSNSKE LTLRIHSKNF HEDTLSSTKA KGHNPRSSIA VKLFKFSREK KAAKTLGIVV
301 GMFILCWLPF FIALPLGSLF STLKPPDAVF KVVFWLGYFN SCLNPIIYPC SSKEFKRAFM
361 RILGCQCRSG RRRRRRRRLG ACAYTYRPWT RGGSLERSQS RKDSLDDSGS CMSGSQRTLP
421 SASPSPGYLG RGAQPPLELC AYPEWKSGAL LSLPEPPGRR GRLDSGPLFT FKLLGEPESP
481 GTEGDASNGG CDATTDLANG QPGFKSNMPL APGHF
(SEQ ID NO:41)

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R143A

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1 MNPDLLDTGHN TSAPAQWGEL KDANFTGPNQ TSSNSTLPQL DVTRAISVGL VLGAFILFAI
61 VGNILVILSV ACNRHLRTPT NYFIVNLAIA DLLLSFTVLP FSATLEVLGY WVLGRIFCDI
121 WAAVDVLCCT ASILSLCAIS IDAYIGVRYS LQYPTLVTRR KAILALLSVW VLSTVISIGP
181 LLGWKEPAPN DDKECGVTEE PFYALFSSLG SFYIPLAVIL VMYCRVYIVA KRTTKNLEAG
241 VMKEMSNSKE LTLRIHSKNF HEDTLSSTKA KGHNPRSSIA VKLFKFSREK KAAKTLGIVV
301 GMFILCWLPF FIALPLGSLF STLKPPDAVF KVVFWLGYFN SCLNPIIYPC SSKEFKRAFM
361 RILGCQCRSG RRRRRRRRLG ACAYTYRPWT RGGSLERSQS RKDSLDDSGS CMSGSQRTLP
421 SASPSPGYLG RGAQPPLELC AYPEWKSGAL LSLPEPPGRR GRLDSGPLFT FKLLGEPESP
481 GTEGDASNGG CDATTDLANG QPGFKSNMPL APGHF
(SEQ ID NO:42)

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FIG. 4B**R143H**

1 MNPDLDTGHN TSAPAQWHEL KDANFTGPNQ TSSNSTLPQL DVTRAISVGL VLGAFILFAI
61 VGNILVILSV ACNRHLRTPT NYFIVNLAIA DLLLSFTVLP FSATLEVLGY WVLGRIFCDI
121 WAAVDVLCCCT ASILSLCAIS IDHYIGVRYS LQYPTLVTRR KAILALLSVW VLSTVISIGP
181 LLGWKEPAPN DDKECGVTEE PFYALFSSLG SFYIPLAVIL VMYCRVYIVA KRTTKNLEAG
241 VMKEMSNKE LTLRIHSKNF HEDTLSSTKA KGHNPRSSIA VKLFKFSREK KAAKTLGIVV
301 GMFILCWLPF FIALPLGSLF STLKPPDAVF KVVFWLGYFN SCLNPIIYPC SSKEFKRAFM
361 RILGCQCRCRG RRRRRRLG ACAYTYRPWT RGGSLERSQS RKDSLDDSGS CMSGSQRTL
421 SASPSPGYLG RGAQPPLELC AYPEWKSGAL LSLPEPPGRR GRLDSGPLFT FKLLGEPE
481 GTEGDASNGG CDATTDLANG QPGFKSNMPL APGHF
(SEQ ID NO:43)

R143N

1 MNPDLDTGHN TSAPAQWHEL KDANFTGPNQ TSSNSTLPQL DVTRAISVGL VLGAFILFAI
61 VGNILVILSV ACNRHLRTPT NYFIVNLAIA DLLLSFTVLP FSATLEVLGY WVLGRIFCDI
121 WAAVDVLCCCT ASILSLCAIS IDNYIGVRYS LQYPTLVTRR KAILALLSVW VLSTVISIGP
181 LLGWKEPAPN DDKECGVTEE PFYALFSSLG SFYIPLAVIL VMYCRVYIVA KRTTKNLEAG
241 VMKEMSNKE LTLRIHSKNF HEDTLSSTKA KGHNPRSSIA VKLFKFSREK KAAKTLGIVV
301 GMFILCWLPF FIALPLGSLF STLKPPDAVF KVVFWLGYFN SCLNPIIYPC SSKEFKRAFM
361 RILGCQCRCRG RRRRRRLG ACAYTYRPWT RGGSLERSQS RKDSLDDSGS CMSGSQRTL
421 SASPSPGYLG RGAQPPLELC AYPEWKSGAL LSLPEPPGRR GRLDSGPLFT FKLLGEPE
481 GTEGDASNGG CDATTDLANG QPGFKSNMPL APGHF
(SEQ ID NO:44)

**FIG. 4C**

Angiotensin II Receptor, Type 1 (AT1A) [Rattus norvegicus].
ACCESSION NP_112247

R126H

1 MALNSSAEDG IKRIQDDCPK AGRHSYIFVM IPTLYSIIIFV VGIFGNDSLVV IVIYFYMKLK
61 TVASVFLLNL ALADLCFLLT CPLWAVYTAM EYRWPFGNHL CKIASASVTF NLYASVFLLT
121 CLSIDHYLAI VHPMKSRLRR TMLVAKVTCI IIWLMAGLAS LPAVIHRNVY FIENTNITVC
181 AFHYESRNST LPPIGLGLTKN ILGFLFPFLI ILTSYTLIWK ALKKAYEIQK NKPRNDDIFR
241 IIMAIVLFFF FSWVPHQIFT FLDVLIQLGV IHDKISDIV DTAMPITICI AYFNNCLNPL
301 FYGFLGKKFK KYFLQLLKYYI PPKAKSHSSL STKMSTLSYR PSDNMSSSAK KPASCFEVE
(SEQ ID NO:45)

FIGS. 5A – 5B**A. Amino Acid sequence of the hGPR3- Enhanced Receptor**

MMWGAGSPLAWSAGSGNVNVS SVGPAEGPTGPAAPLPSPKAQDVVLCI SGTLVSCENA
 LVVAIIVGTPAFRAPMFLLVGS LAVALAGLGLVLHFAAVFCIGSAEMS LVLGVILAM
 AFTASIGSLLAITVDRLYSLYNALTYSETTVTRTYVMLAVWGGALGLGLPVLAWNC
 LDGLTTCGVVYPLSKNHLVVLIAIAFFMVFGIMLQLYAQICR IVCRHAQQIALQRHLLPA
 SHYVATRKGIATLAVVLGAFAACWL PFTVYCLLGDAHS PPLYTYLTLLPATYNSMINPI
 IYAFRNQDVQKVLWAVCCCCAAARGRTPPSLGPQDESCTTASSSLAKDTSS
 (SEQ ID No: 46)

B. Nucleotide sequence of the hGPR3- Enhanced Receptor

ATGATGTGGGGTGCAGGCAGCCCTCTGGCCTGGCTCTCAGCTGGCTCAGGCAACGTGAA
 TGTAAGCAGCGTGGGCCAGCAGAGGGGCCACAGGTCCAGCCGACCACTGCCCTCGC
 CTAAGGCCTGGGATGTGGTGCCTGCATCTCAGGCACCCCTGGTGTCCCTGCGAGAATGCG
 CTAGTGGTGGCCATCATCGTGGCACTCCTGCCTCCGTGCCCCCATGTTCCCTGCTGGT
 GGGCAGCCTGGCGTGGCAGACCTGCTGGCAGGCCTGGCCTGGTCC TGCACTTGCTG
 CTGTCTTCTGCATCGGCTCAGCGGAGATGAGCCTGGTGTGGTTGGCGTGCTGGCAATG
 GCCTTACYGCCAGCATCGGAGTCTACTGGCCATCACTGTCGACCGCTACCTTCTCT
 GTACAATGCCCTCACCTACTATTCAAGAGACAACAGTGACACGGACCTATGTGATGCTGG
 CCTTAGTGTGGGGAGGTGCCCTGGCCTGGGCTGCTGCCCTGTGCTGGCCTGGAACTGC
 CTGGATGGCCTGACCACATGTGGCTGGTTATCCACTCTCCAAGAACCATCTGGTAGT
 TCTGGCCATTGCCCTCTCATGGTGTGGCATCATGCTGAGCTCTACGCCCAAATCT
 GCCGCATCGTCTGCCGCCATGCCAGCAGATTGCCCTCAGCGGCACCTGCTGCCCTGCC
 TCCCACATGTGGCCACCGCAAGGGCATTGCCACACTGGCCGTGGTGTGGAGCCTT
 TGCCGCCCTGCTGGTTGCCCTCACTGTCAGTGCCTGCTGGGTGATGCCCACTCTCCAC
 CTCTCTACACCTATCTTACCTTGCTCCCTGCCACCTACAACCTCCATGATCAACCCTATC
 ATCTACGCCCTCCGCAACCAGGAATGTGCAGAAAGTGTGCTGGGCTGTCTGCTGCTGCTG
 TGCGCCGCACGGGGACGCACCCACCCAGCCTGGTCCCAAGATGAGTCCTGCACCA
 CCGCCAGCTCCCTGCCAAGGACACTCATCGTA
 (SEQ ID No: 47)

FIGS. 5C – 5D**C. Amino Acid sequence of the hGPR6- Enhanced Receptor**

MNASAASLNDSQVVVVAEGAAAAATAAGGPDTGEWPPAAAALGAGGGANGSLELSSQ
 LSAGPPGLLPAPNPWDVLLCVSGTVIAGENALVVALIASTPALRTPMFVLVGSLATAD
 LLAGCGLILHFVFQYLVPSSETVSLLTVGFLVASFAASVSSLLAITVDRLSLYNALTYY
 SRRTLLGVHLLAATWTVSLGLGLPVLGWNCLAERAACSVVRPLARSHVALLSAAFFM
 VFGIMLHYVRICQVWRHAHQIALQQHCLAPPHLAATRKVGTLAVVLGTFGASWLPF
 AIYCVVGSHEDPAVYTYATLLPATYNSMINPIIYAFRNQEIQRALWLLCGCAAARGRT
 PPSLGPQDESCTTASSSLAKDTSS
 (SEQ ID No: 48)

D. Nucleotide sequence of the hGPR6- Enhanced Receptor

ATGAACCGCAGCGCCGCCCTCGCTCAACGACTCCCAGGTGGTGGTAGTGGCGGCCGAAGG
 AGCGGCAGCGGCCACAGCAGCAGGGGGCCGGACACGGGCGAATGGGGACCCCCCTG
 CTGCGGCGGCTCTAGGAGCCGGCGGAGCTAACGGTCTCTGGAGCTGTCCCTCGCAG
 CTGTCGGCTGGCCACCGGACTCCTGCTGCCAGCGGTGAATCCGTGGGACGTGCTCCT
 GTGCGTGTGGGGACAGTGATCGCTGGAGAAAACCGCGCTGGTGGCGCTCATCGCGT
 CCACTCCGGCGCTGCCACGCCATGTTCGTGTGGTAGGCAGCCTGGCACCGCTGAC
 CTGTTGGCGGCTGTGGCCTCATCTTGCACTTTGTGTTCCAGTACTTGGTGCCCTCGGA
 GACTGTGAGTCTGCTCACGGTGGCTTCCTCGTGGCCTCCCTCGCCGCCTCTGTCAGCA
 GCCTGCTGGCATTACGGTGGACCGCTACCTGTCCCTGTATAACCGCGCTCACCTATTAC
 TCGGCCGGACCCTGTTGGCGTGCACCTCCTGCTGCCGCCACTTGGACCGTGTCCCT
 AGGCCTGGGGCTGCTGCCGTGCTGGCTTGGAACTGCCCTGGCAGAGCGGCCGCTGCA
 GCGTGGTGCGCCGCTGGCGCGCAGCCACGTGGCTCTGCTCTCCGCCCTTCTTCATG
 GTCTTCGGCATCATGCTGCACCTGTACGTGCGCATCTGCCAGGTGGCTGGCGCCACCG
 GCACCCAGATCGCGCTGCAGCAGCACTGCCCTGGGCCACCCATCTGCTGCCACCGAGAA
 AGGGTGTGGGTACACTGGCTGTGGTGTGGCACTTTCGGCGCCAGCTGGCTGCCCTTC
 GCCATCTATTGCGTGGTGGGCAGCCATGAGGACCCGGCGGTCTACACTTACGCCACCC
 GCTGCCCGCCACCTACAACCTCCATGATCAATCCCATCATCTATGCCCTCCGCAACCAGG
 AGATCCAGCGGCCCTGTGGCTCTGCTGTGGCTGTGCGGCCACGGGACGCACC
 CCACCCAGCCTGGTCCCCAAGATGAGTCCTGCACCCGCCAGCTCCCTCCCTGGCCAA
 GGACACTTCATCGTGA
 (SEQ ID No: 49)

FIGS. 5E – 5F**E. Amino Acid sequence of the hGPR12- Enhanced Receptor**

MNEDLKVNLSGLPRDYLDAAAENISAAVSRPAVEPEPELVPNPWDIVLCTSGTLIS
 CENAIVLLIFHNPSLRAPMFLLIGSLALADLLAGIGLITNFVFAYLLQSEATKLVTIG
 LIVASFSASVCSLLAITVDRLYLSYYALTYHSERTVTFTYVMLVMLWGTSCILGLLPVM
 GWNCLRDESTCSVVRPLTKNNAAILSVSFLFMFALMLQLYIQICKIVMRHAHQIALQHH
 FLATSHYVTTRKGVSTLAIILGTFAACWMPFTLYSLIADYTYSIYTYATLLPATYNSI
 INPVIYAFRNQEIQKALCLICCGCAAARGRTPPSLGPQDESCTTASSSLAKDTSS
 (SEQ ID No: 50)

F. Nucleotide sequence of the hGPR12- Enhanced Receptor

ATGAATGAAGACCTGAAGGTCAATTAGCGGGCTGCCTCGGGATTATTTAGATGCCGC
 TGCTCGGAGAACATCTCGGCTGCTGTCCTCCTCCGGGTCCTGCGTAGAGCCAGAGC
 CTGAGCTCGTAGTCAACCCCTGGGACATTGTCTTGTACCTCGGAAACCCATCTCC
 TGTGAAAATGCCATTGTGGTCCTTATCATCTTCCACAACCCCAGCCTGCGAGCACCCAT
 GTTCTGCTAATAGGCAGCCTGGCTCTTGCAAGACCTGCTGGCCGGCATTGGACTCATCA
 CCAATTGGTTTGCCCTACCTGCTTCAGTCAGAAGCCACCAAGCTGGTCACGATGGC
 CTCATTGTCGCCCTTTCTCTGCCTCTGTCTGCAGCTTGGCTATCACTGTTGACCG
 CTACCTCTCACTGTACTACGCTCTGACGTACCACTCGGAGAGGAGGGTCACGTTACCT
 ATGTCATGCTCGTCATGCTCTGGGGACCTCCATGCTGGGCTGCTGCCGTATG
 GGCTGGAACTGCCTCCGAGACGAGTCCACCTGCAGCGTGGTCAGACCGCTACCAAGAA
 CAACGGGCCATCCTCTGGTGCCTCTTATGTTGCGCTATGCTCAGCT
 ACATCCAGATCTGTAAGATTGTGATGAGGCACGCCATCAGATAGCCCTGCAGCACCAC
 TTCTGGCCACGTCGCACTATGTGACCACCCGGAAAGGGGTCTCCACCCCTGGCTATCAT
 CCTGGGGACGTTGCTGCTTGCCTGGATGCCCTTACCCCTATTCCCTGATAGCGGATT
 ACACCTACCCCTCCATCTACCTACGCCACCCCTGCCCCACCTACAATTCCATC
 ATCAACCTGTCATATGCTTCAGAAACCAAGAGATCCAGAAAGCGCTCTGTCTCAT
 TTGCTGCGGCTGCGCGGCCAGCTCCCTGGCCAAGGACACTTCATCGTGA
 AGTCCTGCACCACCGCCAGCTCCCTGGCCAAGGACACTTCATCGTGA
 (SEQ ID No: 51)

FIGS. 5G – 5H**G. Amino Acid sequence of the hSREB3- Enhanced Receptor**

MANTTGEPEEVSGALSPPSASAYVKLVLLGLIMCVSLAGNAILSLLVLKERALHKAPYY
 FLLDLCLADGIRSAVCFPVLASVRHGSSWTFSAALSCKIVAFMAVLFCFHAAFMLFCIS
 VTRYMAIAHHRFYAKRMTLWTCAAVICMAWTLVAMAFPPVFDVGTYKFIREDQCIFE
 HRYFKANDTILGFMLMLAVLMAATHAVYGKLLLFEYRHRKMKPVQMVAISQNWTFHGP
 ATGQAAANWIAGFGRGPMPPTILLGIQRONGHAASRRLLGMDEVKGEKQLGRMFYAITLLF
 LLLWSPYIVACYWRVFVKACAVPHRYLATAVWMSFAQAQAVNPIVCFLLNKDLKKCLRTH
 APCAAARGRTPPSLGPQDESCTTASSSLAKDTSS
 (SEQ ID No: 52)

H. Nucleotide sequence of the hSREB3- Enhanced Receptor

ATGGCCAACACTACC GGAGAGCCTGAGGGAGGTGAGCGGCCTCTGTCCCCACCGTCCGC
 ATCAGCTTATGTGAAGCTGGTACTGCTGGACTGATTATGTGCGTGAGCCTGGCGGGTA
 ACGCCATCTTGTCCCTGCTGGTGCCTAAGGAGCGTGCCTGCACAAGGCTCCTTACTAC
 TTCCTGCTGGACCTGTGCCTGGCCGATGGCATACGCTCTGCCGCTGCTTCCCTTTGT
 GCTGGCTTCTGTGCGCCACGGCTCTTCATGGACCTTCAGTGCACTCAGCTGCAAGATG
 TGGCCTTATGGCCGTGCTTTGCTTCCATGCGGCTTCATGCTGTTCTGCATCAGC
 GTCACCCGCTACATGGCCATGCCAACCCACCGCTTCTACGCCAAGCGCATGACACTCTG
 GACATGCGCGGCTGTCACTGCATGGCCTGGACCTGTCTGTGGCCATGGCCTTCCAC
 CTGCTTTGACGTGGCACCTACAAGTTATTGGGAGGAGGACAGTGCATCTTGAG
 CATCGCTACTCAAGGCCAATGACACGCTGGCTTCATGCTTATGTTGGCTGTGCTCAT
 GGCAGCTACCCATGCTGTCTACGGCAAGCTGCTCCTTTCGAGTATGTCACCGCAAGA
 TGAAGCCAGTGCAGATGGTGCCAGCCATCAGCCAGAACTGGACATTCCATGGTCCC
 GCCACCGGCCAGGCTGCTGCCAAGTGGATCGCCGGCTTGCCGTTGGCCATGCCACC
 AACCTGCTGGGTATCCGGCAGAAATGGGATGCAGCCAGCCGGCGGCTACTGGGATGG
 ACGAGGTCAAGGGTGAAAAGCAGCTGGGCCGATGTTCTACGCGATCACACTGCTCTT
 CTGCTCCTCTGGTCACCCATCGTGGCCTGCTACTGGCGAGTGTGAAAGCCTG
 TGCTGTGCCCAACCGCTACCTGCCACTGCTGTTGGATGAGCTTCGCCAGGCTGCCG
 TCAACCCAATTGTCTGCTCCTGCTCAACAAGGACCTCAAGAAGTGCCTGAGGACTCAC
 GCCCCCTGCGCGGCCGACGGGACGCACCCACCCAGCCTGGTCCCAAGATGAGTC
 CTGCACCAACCAGCTCCTCCCTGGCAAGGACACTTCATCGTGA
 (SEQ ID No: 53)

FIGS. 5I – 5J**I. Amino Acid sequence of the hSREB2- Enhanced Receptor**

MANYSHAADNILQNLSPLTAFKLKLTSLGFIIGVSVVGNNLISILLVKDKTLHRAPYYFL
 LDLCCSDILRSAICFPFVFNSVNGSTWTYGTLTCKVIAFLGVLSFCHTAFLFCISVT
 RYLAIAHHRFYTKRLTFWTCLAVICMVWTLSVAMAFPPVLDVGTYSFIREEDQCTFQHR
 SFRANDSLGFMLLLALILLATQLVYLKLIFFVHDRRKMKPVQFVAVSQNWTFHGP GAS
 GQAAANWLAFGRGPTPPTLLGIRQNANTGRRRLVLDEFKMEKRISRMFYIMTFLFL
 TLWGPYLVACYWRFVARGPVVPGGFLTAAVWMSFAQAGINPFVCIFSNRELRCFSTTL
 LYCAAARGRTPPSLGPQDESCTTASSSLAKDTSS
 (SEQ ID No: 54)

J. Nucleotide sequence of the hSREB2- Enhanced Receptor

ATGGCGAACTATGCCATGCAGCTGACAACATTTGCAAAATCTCTCGCCTCTAACAGC
 CTTTCTGAAACTGACTTCCTGGGTTTCATAATAGGAGTCAGCGTGGTGGCAACCTCC
 TGATCTCCATTGCTAGTGAAGATAAGACCTTGCATAGAGCACCTTACTACTTCCTG
 TTGGATCTTGCTGTTAGATATCCTCAGATCTGCAATTGTTCCCATTTGTGTTCAA
 CTCTGTCAAAATGGCTCTACCTGGACTTATGGGACTCTGACTTGCAAAGTGATTGCCT
 TTCTGGGGGTTTGTCTGTTCCACACTGCTTCTGCTCTGCACTCAGTGTCAACC
 AGATACTTAGCTATGCCCATCACCGCTTCTATACAAAGAGGCTGACCTTGGACGTG
 TCTGGCTGTGATCTGTATGGTGTGGACTCTGCTGTGGCCATGGCATTCCCCCGGTT
 TAGACGTGGGCACTTACTCATTAGGGAGGAAGATCAATGCACCTCCAACACCGC
 TCCTTCAGGGCTAATGATTCTTAGGATTATGCTGCTTCTGCTCTCATCCTCCTAGC
 CACACAGCTTGTCTACCTCAAGCTGATATTTCTGCAAGGATCGAAGAAAATGAAGC
 CAGTCAGTTGTAGCAGCAGTCAGCCAGAACTGGACTTTCATGGCCTGGAGCCAGT
 GGCCAGGCAGCTGCCAATTGGCTAGCAGGATTGGAAGGGTCCCACACCACCCACCTT
 GCTGGGCATCAGGAAATGCAAACACCAAGGCAGAAGAAGGCTATTGGCTTAGACG
 AGTTCAAAATGGAGAAAAGAATCAGCAGAATGTTCTATATAATGACTTTCTGTTCTA
 ACCTTGTGGGGCCCTACCTGGTGGCCTGTTATTGGAGAGTTTGCAAGAGGGCCTGT
 AGTACCAAGGGGATTTCTAACAGCTGCTGTGGATGAGTTTGCCCCAAGCAGGAATCA
 ATCCTTTGTCTGCATTTCTCAAACAGGGAGCTGAGGCCTGTTCAAGCACAAACCTT
 CTTTACTGCGCGGCCACGGGACGCACCCACCCAGCCTGGTCCCCAAGATGAGTC
 CTGCACCAACGCCAGCTCCTCCCTGGCAAGGACACTTCATCGTGA
 (SEQ ID No: 55)

FIGS. 5K – 5L**K. Amino Acid sequence of the hGPR8- Enhanced Receptor**

MQAAGHPEPLDSRGFSLPTMGANVSQDNGTGHNATFSEPLPFLYVLLPAVYSGICAVG
 LTGN TAVILVILRAPKMKTVTNVFILNLAVADGLFTLVLPVNIAEHLLQYWPFGE LLCK
 LVLAVDHYNIFSSIYFLAVMSVDRYLVVLATVRSRHM PWRTYRGAKVASLCVWLGVTVL
 VLPFFSFAGVYSNELQVPSCGLSFPWP ERVWFKASRVYTLVLGFVLPVCTICVLYTDLL
 RRLRAVRLRSGAKALGKARRKVTVLVLVVLAVC LLCWTPFH LASVVALTTDL PQTPLVI
 SMSYVITSLSYANSCLNPFLY AFLDDNFRKNFRSILRCAAARGRTPPSLGPQDESCTTA
 SSSLAKDTSS
 (SEQ ID No: 56)

L. Nucleotide sequence of the hGPR8- Enhanced Receptor

ATGCAGGCCGCTGGGCACCCAGAGCCCC TTGACAGCAGGGGCTCCTCTCCCTCCCCAC
 GATGGGTGCCAACGTCTCTCAGGACAATGGCACTGGCCACAATGCCACCTCTCCGAGC
 CACTGCCGTT CCTCATGTGCTCCTGCCCGCCGTGTACTCCGGGATCTGTGCTGTGGGG
 CTGACTGGCAACACGGCCGTACCTTGTAATCTAAGGGCGCCAAGATGAAGACGGT
 GACCAACGTGTTCATCCTGAACCTGGCCGTCGCCGACGGGCTCTCACGCTGGTACTGC
 CCGTCAACATCGCGGAGCACCTGCTGCAGTACTGGCCCTCGGGGAGCTGCTCTGCAAG
 CTGGT GCTGGCCGTCGACC ACTACAACATCTTCTCCAGCATCTACTTCTAGCCGTGAT
 GAGCGTGGACCGATA CCTGGTGGTGTGGCCACCGTGAGGTCCC GCCACATGCCCTGGC
 GCACCTACC GGCGGCGAAGGTGCGCCAGCCTGTGTCTGGCTGGCGTACGGT CCGT
 GTTCTGCCCTTCTCTT CGCTGGCGTCTACAGCAACGAGCTGCAGGTCCAAAGCTG
 TGGGCTGAGCTCCCGTGGCCGAGCGGGTCTGGTTCAAGGCCAGCCGTGTACACTT
 TGGT CCTGGGCTT CGTGTGCCGTGTGCACCATCTGTGTGCTCTACACAGACCTCCTG
 CGCAGGCTGCCGGCGTGC GGCTCCGCTCTGGAGCCAAGGCTCTAGGCAAGGCCAGGCG
 GAAGGTGACCGT CCTGGTCTCGTGTGCTGGCCGTGTGCCCTCTGCTGGACGCCCT
 TCCACCTGGCCTCTGTGCGTGGCCCTGACCA CGGACCTGCCAGACCCCCACTGGTCATC
 AGTATGT CCTACGT CATACCA CAGCCTCAGCTACGCCA ACTCGTGCCTGAACCCCTTCT
 CTACGCC TTTCTAGATGACA ACTTCCGGAAGAAC TCCG CAGCAATTGCGGTGCGCGG
 CGCACGGGGACGCACCCCACCCAGCCTGGTCCCCAAGATGAGTCCTGCACCA ACCGCC
 AGCT CCTCCCTGGCAAGGACACTTCATCGTGA
 (SEQ ID No: 57)

FIGS. 5M – 5N**M. Amino Acid sequence of the hGPR22-Enhanced Receptor**

MCFSPILEINMQSESNI TVRDDIDDINTNMYQPLSYPLSFQVSLTGFLMLEIVLGLGSN
 LTVLVLYCMKSNLINSVSNII TMNLHVLVDIICVGCIPLTIVILLLSLESNTALICCFH
 EACVSFASVSTAINVFAITLDRYDISVKPANRILTMGRAVMLMISIWIIFSFFSFLIPFI
 EVNFFSLQSGNTWENKTLLCVSTNEYTELGMYYHLLVQIPIFFFTVVVMLITYTKILQ
 ALNIRIGTRFSTGQKKARKKKTISLTQHEATDMSQSSGRNVFGVRTSVSVIIALR
 RAVKRHRERRERQKRVFRMSLLIISTFLLCWTPISVLNTTILCLGPSDLLVKLRLCFLV
 MAYGTTIFHPLLyaFTRQKFQKVLSKMKRVCAGRTPPSLGPQDESCTTASSSL
 AKDTSS
 (SEQ ID No: 58)

N. Nucleotide sequence of the hGPR22-Enhanced Receptor

ATGTGTTTTCTCCatTCCTGGAAATCAACATGCAGTCTGAATCTAACATTACAGTGCG
 AGATGACATTGATGACATCAACACCAATATGTACCAACCCTATCATATCCGTTAAGCT
 TTCAAGTGTCTCACCGGATTCTTATGTTAGAAATTGTGTTGGACTTGGCAGCAAC
 CTCACTGTATTGGTACTTACTGCATGAAATCCAACCTTAATCAACTCTGTCAGTAACAT
 TATTACAATGAATCTTATGTACTTGATGTAATAATTGTGTTGGATGTATTCTCTAA
 CTATAGTTATCCTCTGTTCACTGGAGAGTAACACTGCTCTCATTTGCTGTTCCAT
 GAGGCTTGTATCTTGCAAGTGTCTAACAGCAATCAACGTTTGCTATCACTTT
 GGACAGATATGACATCTGTAAAACCTGCAAACCGAATTCTGACAATGGCAGAGCTG
 TAATGTTAATGATATCCATTGGATTTCTTTCTCTTCTGATTCTTTTATT
 GAGGTAATTTTCAGTCTCAAAGTGGAAATACCTGGGAAAACAAGACACTTTATG
 TGTCAGTACAAATGAATACTACACTGAACTGGGAATGTATTATCACCTGTTAGTACAGA
 TCCCAATATTCTTTCACTGTTAGTAATGTTAACATCACACACCAAAATACTTCAG
 GCTCTTAATATTGAAATAGGCACAAGATTTCACACAGGGCAGAAGAAGAAAGCAAGAAA
 GAAAAAGACAATTCTCAACCACACACATGAGGCTACAGACATGTCACAAAGCAGTG
 GTGGGAGAAATGTAGTCTTGGTGAAGAACCTCAGTTCTGTAATAATTGCCCTCCGG
 CGAGCTGTGAAACGACACCGTGAACGACGGAGAAAGACAAAAGAGAGTCTCAGGATGTC
 TTTATTGATTATTCTACATTCTCTGCTGGACACCAATTCTGTTAAATACCA
 CCATTCTATGTTAGGCCAAGTGACCTTAGTAAAATTAGATTGTGTTTTAGTC
 ATGGCTTATGAAACAATATTCAACCTCTATTATATGCAATTCACTAGACAAAATT
 TCAAAAGGTCTGAAAAGTAAAATGAAAAAGCGAGTTGTTGTGCGGCCGACGGGGAC
 GCACCCCCACCCAGCCTGGTCCCCAAGATGAGTCCTGCACCAACGCCAGCTCCTCCCTG
 GCCAAGGACACTTCATCGTGA
 (SEQ ID No: 59)

FIGS. 6A – 6C**A. Amino acid sequence of the β_2 AR-V2R chimera**

MGQPGNGSAFL LAPNRSHAPDHDTQQRDEVVVVGIGIVMSLIVLAIVFGNVLVITAI
 AKFERLQTVTNYFITS LACADLVMGLAVVPFGAAHILMKMWTFGNFWCEFWTSDVLC
 VTASIETLCVIAVDRYFAITSPFKYQSLLTKNKARVII LMVVIVSGLTSFLPIQMHWYRAT
 HQEAINCYANETCCDFFTQNQAYAIASSIVSFYVPLVIMVFVYSRVFQEAKRQLQKIDKSE
 GRFHVQNL SQVEQDGRTGHGLRRSSKFC LKEHKALKTLGIIMGTFTLCWLPFFIVNIVHV
 IQDNLIRKEVYILLNWIGYVN SGFNPLIYCRSPDFRIAFQELL CARGRTPPSLGPQDESCTT
 ASSSLAKDTSS

(Seq. ID No. 60)

B. Amino acid sequence of the MOR-V2R chimera

MDSSTGPGNTSDCS DPLAQASCSPAPGSWLNL SHVDGNQSDPCGLNRTGLGGNDLCP
 QTGSPSMVTAITIMALYSIVCVVGLFGNFLV MYVIVRYTKMKTATNTYIFNLA DALAT
 STLPFQS VNYLMGTWPFGTILCKIVISIDYYNMFTSIFTLCTMSVDRYIAVCHPVKA LDFR
 TPRNAKIVNVCNWILSSAIGLPVFMATT K YRQGSIDCTLTFSHPTWYWE NLLKICVFIF
 AFIMPILIITVCYGLMILRLKSVRMLSGSK EKD RNL RRITRMV L VVVA VFIVCWTP IHIYVI
 IKALITIPETTFQTVSWHFCIALGYTN SCLNPVLYAFLDENFKRCFREFCAAARGRT PPSL
 GPQDESCTTASSSLAKDTSS

(Seq. ID No. 61)

C. Amino acid sequence of the D1AR-V2R chimera

MAPNTSTMDEAGLPAERDFSFRILTACFLSLLILSTLLGNTLVCAA VIRFRHLRSKV TNFF
 VISLA VSDL LVAVL VMPWK AVAEIAGFW PFGSFCN WVA FDIMC STAS ILNLCV ISVDRY
 WAISSPFQYERK MTPKA AFILISVA WTLS VLISFIPV QLSWHKAKPTWPLDGNFTSLEDTE
 DDNC DTRL SRTY AISSSLISFYIPV AIMIVT YTSIYRIA QKQIRR ISALERA AVHAKNCQTT
 AGNGNPVECAQSESSFKMSFKRET KVLK TL SVIMGV FVCCWLPFFISNCMVPFCGEET
 QPFCIDSITFDV FWFGWANSSLNPIIYAFNADFQKA FSTLLGCYRLCAAARGRT PPSLGP
 QDESCTTASSSLAKDTSS

(Seq. ID No. 62)

FIGS. 6D – 6F**D. Amino acid sequence of the 5HT1AR-V2R chimera**

MDVLSPGQGNNTTSPPAPFETGGNTTGISDVTSYQVITSLLLTLIFCAVLGNACVVAA
 IALERSLQNVA NYLIGSLAVTDLMSVLVLPMAALYQVLNKWTLGQVTCDLFIALDVL
 CCTSSILHLCALALDRYWAITDPIDYVNKRTPRRAAALISLTWLIGFLISIPPMLGWRTPED
 RSDPDACTISKDHGYTIYSTFGAFYIPLLMLVLYGRIFRAARFRIRKTVKKVEKTGADT
 RHGASPAPQPQPKSVNGESGSRNWRLGVESKAGGALCANGAVRQGDDGAALEVIEVHR
 VGNNSKEHLPLPSEAGPTCAPASFERKNERNAEAKRMALARERKTVKTLGIIMGTFLC
 WLPFFIVALVLPFCESSCHMPTLLGAIINWLGSNSLLNPVIYAYFNKDFQNAFKKIIKCN
 FCAAARGRTPPSLGPQDESCTTASSSLAKDTSS
 (Seq. ID No. 63)

E. Amino acid sequence of the β3AR-V2R chimera

MAPWPHENSSLAPWPDLPTLAPNTANTSGLPGVPWEAALAGALLALAVLATVGGNLLV
 IVAIAWTPRLQTMTNVFTSLAAADLVMGLLVVPPAATLALTGHWPLGATGCELWTSV
 DVLCVTASIETLCALAVDRYLAUTNPLRYGALVTKRCARTAVLVVVSAAVSFAPIM
 SQWWRVRGADAEEAQRCHSNPRCCAFASNMYPVLLSSVSFYLP LLVMLFVYARVFVVA
 TRQLRLLRGEGRFPPEESPPAPSRS LAPAPVGT CAPPEGVPACGRRPARLLPLREHRA
 CLTLGLIMGTFTLCWLPFFLANVRLALGGPSLVP GPAFLALNW LGYANS AFNPLIYCRSPDF
 RSAFRRLLCRCAAARGRTPPSLGPQDESCTTASSSLAKDTSS
 (Seq. ID No. 64)

F. Amino acid sequence of the Edg1R-V2R chimera

MGPTSVPLVKAHRSSVSDYVNYDIIVRHYNYTGKLNISADKENSIKLTSVVFILICCFIILE
 NIFVLLTIWTKKFHRPMYYFIGNLALS DLLAGVAYTANLLSGATTYKLTPAQWFLRE
 GSMFVALSASVFSLLAIAIERYITMLKMKLHNGSNNFRLFLLISACWVISLILGGLPIMGW
 NCISALSSCSTVPLPLYHKHYILFCTTVFTLLL SIVILYCRYSLVRTRSRRLTFRKNISKAS
 RSSEKSLALLKTVIIVLSVFIACWAPLFILLLDVGCKVKTC DILFRAEYFLVLA VLN SGT
 NPIIYLTNKE MRRAFIRIMSCCKCAAARGRTPPSLGPQDESCTTASSSLAKDTSS
 (Seq. ID No. 65)